

Metro Terminal Draft Upland Site Summary

METRO TERMINAL (DAR SITE ID # 52)

Address: 498 Kingsland Ave, Brooklyn, New York 11222
(500 Kingsland Ave, Brooklyn)

Tax Lot Parcel(s): Brooklyn Block 2517, Lot 14

Latitude: 40.734383

Longitude: -73.942193

Regulatory Programs/
Numbers/Codes: USEPA ID No. NYD040796211, CBS No. 2-000275, MOSF
No. 2-1380, ASF ID No. 2-6101-00093, SPDES No. NY0007676
NYSDEC Spill No. 9109822, 9514780, and 9705125

Analytical Data Status: ☐ Electronic Data Available ☒ Hardcopies only
☐ No Data Available

1 SUMMARY OF CONSTITUENTS OF POTENTIAL CONCERN (COPCs) TRANSPORT PATHWAYS TO THE CREEK

The current understanding of the transport mechanisms of COPCs from the upland portions of the Metro Terminal site (site) to Newtown Creek is summarized in this section and Table 1 and supported in following sections.

Overland Transport

The site is located adjacent to Newtown Creek. Prior to about 1972, the grade at portions of the plant allowed drainage to flow directly to the creek over the top of the existing bulkhead and into the creek. After 1972, stormwater was discharged to the creek via an on-site outfall or discharged to the municipal system (Metropolitan Petroleum Company 1972; NYSDEC 2007). Several petroleum spills and impacts to soil have been reported at the site as described in sections 7.1 and 7.3. Overland transport is a complete historical pathway and a potentially complete current pathway.

Bank Erosion

In 1965, approximately 655 feet of timber bulkhead with solid fill was noted along the site (Board of Engineers 1965). The timber bulkhead remained at the site in 1999 and 2003

(Navigation Data Center 1999). Site plans created in 2003 show a wooden bulkhead along all but approximately 105 feet of the site shoreline (NYSDEC 2003). There is insufficient evidence to make a current or historical pathway determination.

Groundwater

High-volume fuel storage has occurred at the site since the 1930s and several underground storage tanks are present on the site. In the early 1970s, three areas of oil soaked soil were identified at the site (Metropolitan Petroleum Company 1972). Site records indicate groundwater monitoring has been performed historically and may continue to occur at the site (EDR 2010). There is insufficient evidence to make a current or historical groundwater pathway determination.

Overwater Activities

Petroleum products were imported to the site by barge and transferred from the dock to on-site storage tanks via conveyance pipelines (USACE 1953). In 1996, the Coast Guard observed sheen on the creek near the site. The source of the release was not identified (NYSDEC 2011b; EDR 2010). Overwater activities are a potentially complete current and historic pathway.

Stormwater/Wastewater Systems

A private sewer equipped with an oil water separator discharged site runoff to Newtown Creek since at least 1959 (Hazen and Sawyer 1959). Prior to 1972, a portion of the stormwater at the site was discharged directly to Newtown Creek without treatment (Metropolitan Petroleum Company 1972). A State Pollutant Discharge Elimination System (SPDES) permit issued to the site in 1990 authorizes discharge of stormwater and hydrostatic test water to the creek (NYSDEC 2011b). Stormwater collected on a portion of the site drains to the municipal system and is discharged to Newtown Creek via Outfall ST-90 (NYCDEP 2007). Stormwater is a complete historical pathway and a potentially complete current pathway.

This site is located within the Newtown Creek Water Pollution Control Plant (WPCP) sewershed. Sanitary wastewater discharges from the site flow into a separate local municipal system. It is likely that the separate sewer system flows into a larger combined system prior

to reaching the Newtown Creek WPCP. When these combined flows exceed the system's capacity, untreated combined sewer overflows (CSOs) are discharged to Newtown Creek at Outfall NCB-633 (NYCDEP 2007). To the extent that site discharges are coincident with CSO events, this is a potentially complete current and historic pathway.

Air Releases

The New York State Department of Environmental Conservation (NYSDEC) permit database indicates the facility has held air emissions permits for the site since 1990 (NYSDEC 2011b). In 2010, emissions were capped at 24.9 tons of hazardous air pollutants (HAPs) per year (NYSDEC 2010). There is insufficient evidence to make a current or historical pathway determination.

2 PROJECT STATUS

No available documents containing environmental investigations or implemented remedial activities were identified for this site. The Resource Conservation and Recovery Act (RCRA) status of the site is listed as currently inactive (USEPA 2011).

3 SITE OWNERSHIP HISTORY

Respondent Member:

☐ Yes ☒ No

Owner	Years	Occupant	Types of Operations
Unknown	ca. 1905 – ca. 1953	Greenpoint Chemical Works (ca. 1905 – ca. 1916)	Chemical manufacturing
		Foundation Company of New York (ca. 1905 – ca. 1916)	Storage and repair yard
		John Pierce Stone Contractor (ca. 1905 – ca. 1916)	Stone Cutting
		Rockland – Rockport Lime Company (ca. 1905 – ca. 1916)	Lime storage
		Standard Oil Company Eclipse Works (ca. 1905 – ca. 1916)	Lubricating oils

Owner	Years	Occupant	Types of Operations
		Chris Cunningham Company (ca. 1905 – ca. 1916)	Boiler works
		Eclipse Box and Lumber Company	Lumber storage
		Arguls Gasoline and Oil Sales Company, Inc. (ca. 1942)	Fuel storage and sales
		Petroleum Heat and Power Co. (ca. 1940 – ca. 1980)	Fuel storage, fuel delivery
Metropolitan Petroleum Corporation	1953 – 1960	Metropolitan Petroleum Corporation (ca. 1953 – 1960)	Fuel storage and transfer facility
The Pittston Company (merge with Metropolitan Petroleum Corp.)	1960 – 1980	Valentine Transportation Company (ca. 1957)	
Pittston Petroleum Inc. f/k/a Metropolitan Petroleum Company, Inc.	1980 – 1983	American Mineral Spirits Co. (ca. 1957 – ca. 1969)	
		Metropolitan Petroleum Corporation (ca. 1960 – ca. 1983)	
Ultramar Petroleum Inc. f/k/a Pittston Petroleum Inc. f/k/a Metropolitan Petroleum Company, Inc.	1983 – 1986	Metropolitan Petroleum Corporation (ca. 1976 – ca. 1980)	Bulk fuel storage terminal
Metropolitan Terminals Corp.	1986 – present	Ultramar Petroleum Inc. Greenpoint Terminal	
		Metropolitan Terminals Corp.	

Notes:

ca. – circa

co. – company

corp. – corporation

f/k/a – formerly known as

4 PROPERTY DESCRIPTION

The property occupies approximately 4.5 acres adjacent to Newtown Creek. The site is at approximately 5 feet above mean sea level and slopes down from the southwest to the northeast towards Newtown Creek. The majority of the site appears to be paved as shown in a 2010 aerial photograph presented as Figure 1. A wooden bulkhead extends along all but 105 feet of the 750-foot site shoreline (NYSDEC 2003). Eleven aboveground storage tanks (ASTs) and 13 underground storage tanks (USTs) are present at the site. A truck loading rack, truck maintenance building, and office building are also present at the site. A 2007 site plan is included as Attachment 1.

The site is bordered by the ExxonMobil Greenpoint Remediation Project (DAR Site ID No. 53) to the north, Greenpoint Avenue to the south, Newtown Creek to the east, and Kingsland Avenue to the west (see Figure 1). The site and surrounding area are zoned for manufacturing.

5 CURRENT SITE USE

The site is a multi-million gallon petroleum storage facility and transfer terminal, and has been the main office for METRO Energy since 1986. The site receives petroleum products and additives including diesel, biodiesel, xylene, gasoline, and fuel oil. Products are brought to the site through pipeline, as well as delivery by barges. The site is used to load trucks for delivery of product off-site (Sanborn 1989). Attachment 1 shows the location of buildings and aboveground storage tanks on site.

6 SITE USE HISTORY

The site was occupied by several different businesses in 1905 including Greenpoint Chemical Works, Foundation Company, John Pierce Stone Contractor, Rockland – Rockport Lime Company, Standard Oil Company Eclipse Works, and Chris Cunningham Company (Sanborn 1905). Three of these companies were still on site in 1916 including Rockland – Rockport Lime Company, Standard Oil Company, and Foundation Company, with the addition of Eclipse Box and Lumber Company (Sanborn 1916).

Petroleum Heat and Power Company was operating at the site by the 1940s and continued to operate there until the 1980s (Sanborn 1942, 1980). Metropolitan Petroleum Corporation began operating a fuel storage and transfer facility at the site in the mid-1960s (Sanborn 1965).

Several tenants operated at the site throughout the 1950s, 1960s, and 1970s, including a transportation company, fuel oil delivery companies, the Petroleum Heat and Power Company, and Metropolitan Petroleum Company (*Brooklyn Address Telephone Directory* 1948; 1951; 1954; 1957; 1960; 1963; 1966; 1969; 1972; 1975; 1978; Sanborn 1965). The Metropolitan Petroleum Company is shown operating at the site through 1989 (Sanborn 1980, 1989).

The Pittston Company acquired a “substantial” interest in Metropolitan Petroleum Corporation in 1951 (*WS*/1951). In 1960, the Metropolitan Petroleum Company merged into the Pittston Company (Metropolitan Petroleum Corporation 1960). Pittston Company sold its petroleum operations to Ultramar America LTD in 1983 (Dow Jones Newswires 1983). Ultramar continued to operate a bulk fuel storage and transfer facility at the site (NYSDEC 1985).

Metro Terminals Corporation purchased the property from Ultramar in 1986 (Ultramar Petroleum, Inc. 1986). In 2004, Metro Terminals Corporation purchased part of the adjacent parcel at 427 Greenpoint Avenue (Salvmonet Realty, Ltd. 2004). Metro Terminals Corporation acquired the rest of the lot in 2008 (New Town Realty Associates, Inc. 2007).

7 CURRENT AND HISTORICAL AREAS OF CONCERN AND COPCs

The current understanding of the potential upland and overwater areas of concern (AOCs) at the site is summarized in Table 1. The following sections provide brief discussion of the potential sources and COPCs at the site requiring additional discussion.

Potential areas of concern at the site include tanks, pipelines, and ancillary equipment used for the transfer and storage of petroleum products and those areas in which chemical manufacturing, lime storage, vehicle maintenance and fueling occurred. COPCs associated

with these sources include total petroleum hydrocarbons (TPH) (gasoline, diesel, No. 2 or 6 fuel oils), volatile organic compounds (VOCs), including benzene, toluene, ethylbenzene and xylene (BTEX) and polycyclic aromatic hydrocarbons (PAHs) and other semivolatile organic compounds (SVOCs), and metals (including lead).

7.1 Uplands

In 1972, the Metropolitan Petroleum Company described their operations as receiving petroleum by barge and distributing the oil to tank trucks at a truck loading rack, with an above ground storage tank and three mounded storage tanks (Metropolitan Petroleum Company 1972). Three areas of oil soaked soil were identified at the site and plans to remove the contaminated material and replace it with clean fill were submitted to NYSDEC (Metropolitan Petroleum Company 1972). Contaminated soil and groundwater were encountered during installation of a pipeline along Kingsland Avenue for the Metro Terminal in 1997 (EDR 2010). However, subsequent groundwater monitoring at the site indicated that on-site groundwater had not been impacted (EDR 2010).

The site has 34 ASTs and USTs (locations shown in Attachment 1), as summarized in the following table (EDR 2010; Environics 1999):

Tank ID	Install Date	Tank Status	Capacity (gallons)	Contents
Aboveground Storage Tanks				
4	Unknown	Unknown	420,000	Unleaded Gasoline
5	Unknown	Unknown	420,000	Diesel
6	01/66	In service	1,680,000	No. 2 Fuel Oil
7	06/75	In service	500,000	Unleaded Gasoline
8	06/75	In service	500,000	Unleaded Gasoline
19A	02/95	In service	6,000	Xylene
19B	02/95	In service	6,000	Xylene
20	02/95	In service	4,000	Vinyl acetate monomer
21	03/95	In service	185	Xylene
6A	Unknown	In service	20,500	Diesel
A	Unknown	In service	5,000	No. 6 Fuel Oil
Underground Storage Tanks				

Tank ID	Install Date	Tank Status	Capacity (gallons)	Contents
3	Unknown	In service	81,400	No. 6 Fuel Oil
6A	Unknown	Unknown	20,500	Diesel
7A	Unknown	Unknown	20,500	Diesel
8A	Unknown	Unknown	20,500	Diesel
9A	Unknown	In service	18,668	Diesel
10A	Unknown	In service	18,772	Diesel
11A	Unknown	In service	18,668	Diesel
12A	Unknown	In service	18,772	Diesel
13A	Unknown	In service	18,772	Diesel
14A	Unknown	In service	18,719	Diesel
15A	Unknown	In service	18,772	Diesel
16A	Unknown	In service	18,772	Diesel
17A	Unknown	In service	18,719	Diesel
18A	Unknown	In service	18,782	Diesel
1C	Unknown	In service	550	Diesel
1G	Unknown	Unknown	4,000	Unleaded Gasoline
1D	Unknown	In service	550	Empty
2C	Unknown	In service	550	Diesel
2D	Unknown	In service	550	Diesel
3C	Unknown	In service	550	Diesel
4C	Unknown	In service	550	Diesel
5C	Unknown	In service	550	Unleaded Gasoline
6C	Unknown	In service	550	Unleaded Gasoline

Notes:

ID – identification

No. – number

Available manifest documentation indicates that in 1980 through 1984, the site shipped non-listed ignitable wastes (D001), non-listed toxic wastes (D000), API sludge (K051), tank bottoms (leaded) waste (K052), and slop oil emulsion petroleum waste (K049) (EDR 2010).

7.2 Overwater Activities

Metropolitan Petroleum Corporation imported petroleum products by barge and transferred the products through pipes from the dock to on-site storage tanks (USACE 1953). In 1996,

the U.S. Coast Guard observed sheen on the creek near the site. The source of the release was not identified (NYSDEC 2012; EDR 2010).

7.3 Spills

Documented spills at the site are summarized in the following table (EDR 2010; NYSDEC 2012):

NYSDEC Spill No.	Spill Date	Close Date	Material Spilled	Remarks
9109822	12/31/91	11/21/94	Raw Sewage	Pipeline had valve left open
9514780	2/19/96	2/22/96	Nos. 2 and 6 Fuel Oils	25- by 25-foot sheen on creek – team called in from Coast Guard
9705125	7/29/97	4/12/05	Petroleum solvents	Contaminated soil discovered and removed while rerouting pipeline; subsequent groundwater sampling showed no groundwater contamination

Note:

NYSDEC – New York State Department of Environmental Conservation

8 PHYSICAL SITE SETTING

No site-specific geologic or hydrogeologic information is available for the site. The following information is based on regional conditions in the Brooklyn/Queens area.

In general, the geologic setting of Newtown Creek area consists of Quaternary glacial deposits overlying Paleozoic gneiss and schist bedrock (Misut and Monti 1999). The contact between the glacial deposits and bedrock slopes rather steeply to the southeast, ranging in depth from less than 50 feet below ground surface (bgs) near the mouth of Newtown Creek to more than 200 feet bgs at the eastern portions of the historical data review area. The near surface geology is of most interest relative to potential groundwater transport pathways from upland sites to the creek. In most areas, a heterogeneous anthropogenic fill unit of variable thickness (generally less than 20 feet thick) immediately underlies the surface. Beneath the fill in most areas are complex upper glacial deposits of Late Pleistocene age consisting of ablation till, outwash, and glaciolacustrine sediments. In some areas near Newtown Creek, a

shell-bearing gray silt unit is present beneath the fill; this silt may represent post-glacial intertidal sediments deposited in wetlands adjacent to the creek prior to filling in the 1800s. An extensive sequence of regionally significant glacial units underlies the upper glacial deposits in areas where bedrock is deeper (Misut and Monti 1999).

The surface aquifer is typically contained with the upper glacial deposits and the lower portion of the anthropogenic fill layer. Depth to groundwater varies from a few feet to about 30 feet bgs in the historical data review area. Shallow groundwater generally flows towards and discharges to Newtown Creek (Misut and Monti 1999).

9 NATURE AND EXTENT (CURRENT UNDERSTANDING OF ENVIRONMENTAL CONDITIONS)

9.1 Soil

Soil Investigations

☐ Yes ☒ No

Bank Samples

☐ Yes ☒ No ☐ Not Applicable

Soil-Vapor Investigations

☐ Yes ☒ No

As described in section 7.1, three areas of oil soaked soil were present at the site in 1972. Plans to remove the contaminated material and replace it with clean fill were submitted to NYSDEC (Metropolitan Petroleum Company 1972). Contaminated soil was encountered in 1997 during installation of a pipeline along Kingsland Avenue to the Metro Terminal (EDR 2010). No additional information regarding soil investigations or sampling results were found in reviewed material.

9.2 Groundwater

Groundwater Investigations

☐ Yes ☒ No

NAPL Presence (Historical & Current)

☐ Yes ☒ No

Dissolved COPC Plumes

☐ Yes ☒ No

Visual Seep Sample Data

☐ Yes ☒ No ☐ Not Applicable

As described in section 7.1, available site records indicate groundwater monitoring has been performed historically and may continue to occur at the site (EDR 2010). Three onsite "MET

Test Wells” are shown in Attachment 2. However, details and specific results of the groundwater monitoring were not identified in records available for review.

9.3 Surface Water

Surface Water Investigation

☐ Yes ☒ No

SPDES Permit (Current or Past)

☒ Yes ☐ No

Industrial Wastewater Discharge Permit (Current or Past)

☐ Yes ☒ No

Stormwater Data

☒ Yes ☐ No

Catch Basin Solids Data

☐ Yes ☒ No

Wastewater Data

☐ Yes ☒ No

9.3.1 Stormwater and Wastewater Systems

A private sewer equipped with an oil water separate (OWS) discharged site runoff to Newtown Creek since at least 1959 (Hazen and Sawyer 1959). Prior to 1972, stormwater from portions of the site flowed directly into Newtown Creek over the top of the existing bulkhead. In 1972, stormwater from the site was conveyed to a surface skimmer and OWSs prior to discharge to the creek via Outfall 001 (Metropolitan Petroleum Company 1972, Attachment 2; NYSDEC 1972). In 2003, stormwater from the site was collected in on-site yard drains (see Attachment 2) and discharged directly to Newtown Creek through Outfall 001 (NYSDEC 2003). Stormwater collected on a portion of the site drains to the municipal system and is discharged to Newtown Creek via Outfall ST-90 (NYCDEP 2007).

This site is located within the Newtown Creek WPCP sewershed. Sanitary discharges from the site flow into a separate local municipal system. It is likely that the separate sewer system flows into a larger combined system prior to reaching the Newtown Creek WPCP. When these combined flows exceed the system’s capacity, untreated CSOs are discharged to Newtown Creek at Outfall NCB-633 (NYCDEP 2007).

9.3.2 SPDES Permit

A SPDES permit application for the site was submitted to NYSDEC in 1989. The permit authorizes discharge of stormwater and hydrostatic testing water from the site to Newtown Creek. Stormwater from the truck loading rack, yard areas, and tank dikes discharges to

Outfall 001 and hydrostatic test water discharges to Outfall 01A (see Attachment 1). The permit was issued in November 1990. It was renewed in 1998 and on a 5-year cycle thereafter. The most recent renewal was February 25, 2008. Permit parameters and limits are summarized as follows (NYSDEC 1990a; NYSDEC 2011b):

Permit Type	Permit Number	Effective Date	Outfalls	Frequency-Parameters (Limit)
SPDES	SPDES No. 000 7676	11/90 (Renewed 9/21/98, 3/12/03, 2/25/08)	001 – Stormwater from Loading Rack, Yard Areas and Tank Dikes	Monthly instantaneous – Flow
				Monthly grab – Oil and Grease (15 mg/L Daily Maximum)
				Quarterly grab – Benzene (0.10 mg/L Daily Maximum)
				Quarterly grab – Toluene (0.10 mg/L Daily Maximum)
				Quarterly grab – Xylene (0.10 mg/L Daily Maximum)
				Quarterly grab – Ethylbenzene (0.10 mg/L Daily Maximum)
				Quarterly grab – MTBE (0.10 mg/L Daily Maximum)
			01A – Hydrostatic Test Water	Each Discharge – Flow
				Each Discharge – Oil and Grease (15 mg/L Daily Maximum)
				Each Discharge – pH (6.0-9.0)
				Each Discharge – Benzene (0.020 mg/L Maximum)
				Each Discharge – Toluene (0.020 mg/L Maximum)
				Each Discharge – Xylenes (Total) (0.020 mg/L Maximum)
				Each Discharge – Ethylbenzene (0.020 mg/L Maximum)
				Each Discharge – Chlorine, Total Residual (0.1 mg/L Maximum)
				Each Discharge – MTBE (monitor)

Notes:

mg/L – milligram per liter

MTBE – methyl tertiary butyl ether

No. – number

9.3.3 Sampling Data

Prior to the issuance of the SPDES permit, site effluent was analyzed for toluene and xylene as part of a NYSDEC SPDES industrial chemical survey (NYSDEC 1990a). Discharge flows from the site reported in the survey were an average 618 gallons per day. Results of the analysis are provided in the following table (NYSDEC 1990a):

Report Date	Constituent	Date	Result	Unit
8/90	Toluene	9/26/90	40.3	µg/L
		7/26/90	24.2	µg/L
		5/2/90	4.6	µg/L
	Xylene	9/26/90	34.8	µg/L
		7/26/90	18.9	µg/L
		5/2/90	7.3	µg/L

Notes:

µg/L – microgram per liter

The original permit issued in 1990 required submittal of a monthly discharge monitoring report (DMR) containing the effluent sampling results from Outfall 001 and any discharges to Outfall 01A (NYSDEC 1990b). Monitoring results prior to 2006 were not included in documents available for review. Results reported on DMRs between 2006 and 2011 indicated that the site did not exceed permit limitations (NYSDEC 2011a).

9.3.4 Surface Water Summary

By 1959, runoff from portions of the site was conveyed to an OWS and discharged to the creek via an on-site outfall (Hazen and Sawyer 1959). Runoff from other portions of the site flowed over the bulkhead and into the creek without treatment (Metropolitan Petroleum Company 1972). Stormwater and hydrostatic test water have been discharged from the site to the creek via private SPDES-permitted outfalls since 1990 (NYSDEC 1990a). Sanitary discharges from the site flow into a municipal system and may be discharged to Newtown Creek at Outfall NCB-633 during CSO events (NYCDEP 2007).

9.4 Sediment

Creek Sediment Data

☐ Yes ☒ No ☐ Not Applicable

Sediment investigation information was not found in reviewed documents.

9.5 Air

Air Permit

☒ Yes ☐ No

Air Data

☐ Yes ☒ No

9.5.1 Air Permit

Permits for air emissions at the site have been issued since October 1990. A summary of permit types and dates for the site from the NYSDEC Permit database are provided below (NYSDEC 2011b):

Permit Type	Effective Date	Permit Parameters
Process, Exhaust, Ventilation (Operate)	10/25/90	NR
Air State Facility	6/09/97	Gasoline throughput cap: 1,800,000 gallons per year Total No. 6 Fuel Oil cap: 100,000 gallons per year
Air State Facility (Modification)	6/04/02	Gasoline throughput cap: 2,000,000 gallons per year Total No. 6 Fuel Oil cap: 50,000 gallons per year
Air State Facility (Modification)	12/30/04	Gasoline throughput cap: 2,000,000 gallons per year
Air State Facility (Modification)	9/23/05	Gasoline throughput cap: 3,500,000 gallons per year
Air State Facility (Modification)	11/06/07	Gasoline blended with ethanol throughput cap: 3,500,000 gallons per year
Air State Facility (Modification)	1/05/10	Gasoline blended with ethanol throughput cap: 3,500,000 gallons per year 24.9 ton HAP emissions cap per year

Notes:

HAP – hazardous air pollutant

No. – number

NR – Not reported in source documents

On June 9, 1997, the site applied for an Air State Facility (ASF) permit for emissions related to aboveground gasoline storage tanks (total capacity 1,441,000 gallons), a refrigeration vapor

recovery unit, and two steam boilers that burn No. 6 Fuel oil. Requirements of the 1997 ASF permit capped total throughput at 180,000,000 gallons of gasoline per year. Total No. 6 Fuel Oil burned in the steam boilers was capped at 100,000 gallons per year (NYSDEC 1997). Between 1997 and 2007, the steam boilers were phased out of use and the total gasoline throughput cap was increased to 3,500,000 gallons per year, resulting in an increase to the maximum yearly Hazardous Air Pollutants emissions to 24.9 tons per year (NYSDEC 2010).

10 REMEDIATION HISTORY (INTERIM REMEDIAL MEASURES AND OTHER CLEANUPS)

In 1972, plans to remove three areas of oil soaked soil at the site were submitted to NYSDEC (Metropolitan Petroleum Company 1972). No additional information regarding soil removal or other remedial measures was identified in files available for review.

11 BIBLIOGRAPHY/INFORMATION SOURCES

USACE, 1965a. *Port Series No. 5, The Port of New York, New York and New Jersey, Volume 2: Data on Piers, Wharves, and Docks, Part 2*. USACE, Board of Engineers for Rivers and Harbors. 1965.

Brooklyn Address Telephone Directory. May 7, 1948.

Brooklyn Address Telephone Directory. October 19, 1951.

Brooklyn Address Telephone Directory. May 14, 1954.

Brooklyn Address Telephone Directory. July 3, 1957.

Brooklyn Address Telephone Directory. January 7, 1960.

Brooklyn Address Telephone Directory. February 5, 1963.

Brooklyn Address Telephone Directory. January 25, 1966.

Brooklyn Address Telephone Directory. January 28, 1969.

Brooklyn Address Telephone Directory. January 26, 1972.

Brooklyn Address Telephone Directory. July 18, 1975.

Brooklyn Address Telephone Directory. July 21, 1978.

Brooklyn Address Telephone Directory. August 21, 1980.

Brooklyn Address Telephone Directory. May 2, 1986.

Dow Jones Newswires, 1983. Pittston Co. Completes Sale of Unit for \$100 Million.
May 26, 1983.

EDR (Environmental Data Resources, Inc.), 2010. EDR DataMap™ Environmental Atlas™
for “Newton Creek Queens, New York.” November 4, 2010.

Environics, 1999. *Best Management Practice Plan*. Prepared for Metro Terminals
Corporation. February 1999.

Hazen and Sawyer, 1959. Water Pollution Control Board, State of New York. Metropolitan
Petroleum Corporation. August 13, 1959.

Metropolitan Petroleum Corporation, 1960. Certificate of Ownership Merging Metropolitan
Petroleum Corporation into the Pittston Company. September 30, 1960.

Metropolitan Petroleum Company, 1972. *Engineering Report of Pollution Abatement
Program of Newtown Creek, Brooklyn in Accordance with Consent Order No. 1005*.
July 14, 1972.

Misut and Monti (Misut, P.E., and Monti, J. Jr.), 1999. *Simulation of Ground-Water Flow
and Pumpage in Kings and Queens Counties, Long Island, New York*. U.S. Geological
Survey. Water-Resources Investigations Report 98-4071.

USACE, 1999. *Port Series No. 5, The Port of New York, New York, and New Jersey and
Ports on Long Island, New York*. USACE, Water Resources Support Center,
Navigation Data Center. 1999.

New Town Realty Associates, Inc., 2007. Deed to Metro Terminals Corp.
December 31, 2007.

NYCDEP, 2007a. *Landside Modeling Report, Sewershed Characteristics and Model
Calibration*. City-Wide Long Term CSO Control Planning Project. Newtown Creek
WPCP Service Area. Draft. New York City Department of Environmental
Protection, Bureau of Engineering Design and Construction. July 2007.

NYSDEC (New York State Department of Environmental Conservation), 1972. Consent
Order, File No. 1005. Metropolitan Petroleum Company. June 12, 1972.

- NYSDEC, 1985. *State Pollution Discharge Elimination System (SPDES) Discharge Permit No. NY-0007676*. Issued to: Ultramar Petroleum, Inc. April 1, 1985.
- NYSDEC, 1990a. State Pollutant Discharge Elimination System Industrial (SPDES) Chemical Survey. Metro Terminals Corp. August 29, 1990
- NYSDEC, 1990b. *State Pollutant Discharge Elimination System (SPDES) Discharge Permit No. NY-0007676*. Issued to: Metro Terminals Corp. November 1990.
- NYSDEC, 1997. New York State Department of Environmental Conservation Air Permit Application. DEC ID 2-6101-0093. June 5, 1997.
- NYSDEC, 2003. State Pollutant Discharge Elimination System (SPDES) Notice/Renewal Application/Permit. Metro Terminals Corp. January 16, 2003.
- NYSDEC, 2010. *Air State Facility Permit 2-6101-00093/00008*. Issued to: Metro Terminals Corp. September 16, 2010.
- NYSDEC, 2011a. 2006 – 2010 Discharge Monitoring Report Data for Selected SPDES Sites that Discharge to Newtown Creek. Prepared for Anchor QEA, LLC, by Ian Beilby, NYSDEC. October 5, 2011.
- NYSDEC, 2011b. Search DEC Permit Applications Data. Accessed December 27, 2011. Available from: <http://www.dec.ny.gov/cfm/xtapps/envapps/index.cfm?>
- NYSDEC, 2012. Environmental Site Database. Accessed January 19, 2012. Available from: <http://www.dec.ny.gov/chemical/8437.html>
- NYSDOS, 2012. New York State, Division of Corporations, State Records, and UCC, Entity Information, Metro Terminals Corp. Accessed February 13, 2012. Available from: http://www.dos.ny.gov/corps/bus_entity_search.html
- Salvmonet Realty, Ltd., 2004. Deed to Metro Terminals Corp. May 11, 2004.
- Sanborn (Sanborn Map Company), 1905. *Insurance Maps of the Borough of Brooklyn, City of New York*. Volume 4: Sheets 57 and 58. 1905.
- Sanborn, 1916. *Insurance Maps of the Borough of Brooklyn, City of New York*. Volume 4: Sheets 57 and 58. 1916.
- Sanborn, 1942. *Insurance Maps of the Borough of Brooklyn, City of New York*. Volume 4: Sheets 57 and 58. Original 1916, revised 1942.

Sanborn, 1965. *Insurance Maps of the Borough of Brooklyn, City of New York*. Volume 4: Sheet 57. Original 1916, revised 1965.

Sanborn, 1980. *Insurance Maps of the Borough of Brooklyn, City of New York*. Volume 4: Sheet 57. 1980.

Sanborn, 1989. *Insurance Maps of the Borough of Brooklyn City of New York*. Volume 4: Sheet 57. Original 1916, revised 1989.

Ultramar Petroleum Inc., 1986. Deed to Metro Terminals Corp. July 24, 1986.

USACE (U.S. Army Corps of Engineers), 1953. *Port Series No. 5, The Port of New York, New York and New Jersey, Part 2: Data on Piers, Wharves and Docks*. U.S. Army Corps of Engineers and the Maritime Administration.

USEPA (U.S. Environmental Protection Agency), 2011. Environmental and Compliance History Online (ECHO) Database. Accessed January 24, 2011.

Available from:

<http://www.epa-echo.gov/cgi-bin/get1cReport.cgi?tool=echo&IDNumber=110000323427>

12 ATTACHMENTS

Figures

Figure 1 Site Vicinity Map: Metro Terminal

Tables

Table 1 Potential Areas of Concern and Transport Pathways Assessment

Supplemental Attachments

Attachment 1 1997 Site Schematic (NYSDEC 2004)

Attachment 2 Page 6 of 8 Monitoring Locations (NYSDEC 2003)

Table 1
Potential Areas of Concern and Transport Pathways Assessment – Metro Terminal

Potential Areas of Concern	Media Impacted					COPCs														Potential Complete Pathway						
	Surface Soil	Subsurface Soil	Groundwater	Catch Basin Solids	Creek Sediment	TPH			VOCs			SVOCs	PAHs	Phthalates	Phenolics	Metals	PCBs	Herbicides and Pesticides	Dioxins/Furans	Overland Transport	Groundwater	Direct Discharge – Overwater	Direct Discharge – Storm/Wastewater	Discharge to Sewer/CSO	Bank Erosion	Air Releases
						Gasoline-Range	Diesel – Range	Heavier – Range	Petroleum Related (e.g., BTEX)	VOCs	Chlorinated VOCs															
Spills	√	√	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	√	?	?	√	?	?	?
Petroleum conveyance pipes and transfer equipment	?	√	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	√	?	?	?
Petroleum ASTs/USTs and ancillary equipment	?	√	?	?	?	√	√	√	√	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
Barge unloading	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
Three areas of oil soaked soil (1972)	√	√	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	√	?	?	?	?	?	?
Areas used for industrial operations including lumber storage, chemical manufacturing and vehicle maintenance and fueling	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?

Notes:

√ – COPCs are/were present in areas of concern having a current or historical pathway that is determined to be complete or potentially complete.

? – There is not enough information to determine if COPC is/was present in area of concern or if pathway is complete.

-- – Current or historical pathway has been investigated and shown to be not present or incomplete.

AST – aboveground storage tank

BTEX – benzene, toluene, ethylbenzene, and xylenes

COPC – constituent of potential concern

CSO – combined sewer overflow

PAH – polycyclic aromatic hydrocarbon

PCB – polychlorinated biphenyl

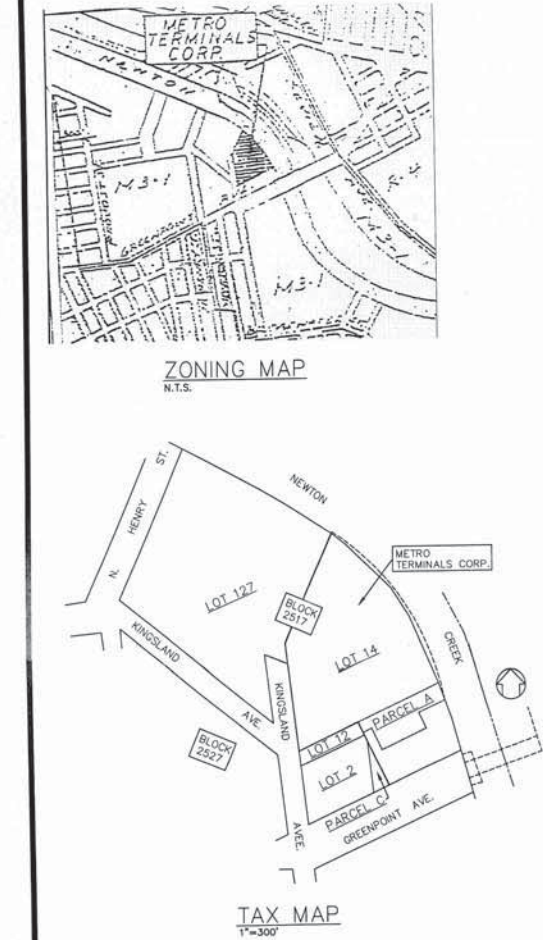
SVOC – semi-volatile organic compound

TPH – total petroleum hydrocarbon

UST – underground storage tank

VOC – volatile organic compound

SUPPLEMENTAL ATTACHMENTS

[illegible]

The daily average discharge is the total discharge by weight or in other appropriate units as specified herein, during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges in appropriate units as specified herein divided by the number of days during the calendar month when measurements were made.

The daily maximum discharge means the total discharge by weight or in other appropriate units as specified herein, during any calendar day.

The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the location(s) indicated below: (Show sampling locations and outfalls with sketch or flow diagram as appropriate) for 001 from effluent flow prior to discharge to the Newtown Creek. Sampling of hydrostatic test effluents shall be from the tank, pipe, etc... contents prior to discharge via 001:

